

What is claimed is:

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1. A gas sensor comprising:
- 5 a hollow cylindrical housing having an open end;
- a sensor element disposed within said housing, said sensor element having a sensing portion projecting from the open end of said housing; and
- a cover assembly made up of an outer cylindrical cover and an inner cylindrical cover each of which includes an open end portion
- 10 and a body portion, the body portion of the inner cylindrical cover being disposed within the body portion of the outer cylindrical cover in a non-contact fashion, the open end portion of at least one of the outer and inner cylindrical covers having a shoulder which is placed in contact with the open end portion of the other cylindrical
- 15 cover to establish a positional relation between said cover assembly and said housing which defines portions of the outer and inner cylindrical covers installed on an end side wall of said housing continuing from the open end thereof.
- 20 2. A gas sensor as set forth in claim 1, wherein the open end portion of each of the outer and inner cylindrical covers has a side end wall greater in diameter than the body portion and a shoulder formed between the side end wall and the body portion, the shoulder of the inner cylindrical cover being placed in contact with
- 25 the shoulder of the outer cylindrical cover to establish a positional relation between the open end portions of the outer and inner

and covers which defines a given lap and inner cylindrical covers which of said housing continuing from sensor as set forth in claim 1, a large-diameter portion and a small-diameter portion is defined and a step formed between the large-diameter portion and the small-diameter portion of the inner cylindrical cover bent outward to define the shoulder of the inner cylindrical cover in contact with the step of said large-diameter portion of the outer cylindrical cover and portions of the outer and inner cylindrical covers on the end side wall of said housing.

sensor as set forth in claim 1, where the outer cylindrical cover has a large-diameter portion and a small-diameter portion formed between the side end wall of the large-diameter portion and portion of the inner cylindrical cover bent outward to define a flange which is in contact with the shoulder of the outer cylindrical cover of the open end of said housing and the shoulder of the outer cylindrical cover of the open end portion of the inner cylindrical cover on the end side wall of said housing.

assembly on said housing.

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4. A gas sensor as set forth in claim 1, wherein the open end portion of the outer cylindrical cover has a side end wall and the shoulder formed between the side end wall and the body portion, the open end portion of the inner cylindrical cover having an end wall bent outward to define a flange which is placed in contact with a surface of the open end of said housing and which engages at an end thereof with the shoulder of the outer cylindrical cover to secure a given lap of the open end portion of the outer cylindrical cover over the end side wall of said housing for installation of said cover assembly on said housing.

5. A gas sensor as set forth in claim 1, wherein the open end portion of each of the outer and inner cylindrical covers has a side end wall and a shoulder formed between the side end wall and the body portion, the side end wall of the inner cylindrical cover abutting at an end thereof on the open end of said housing, the shoulder of the inner cylindrical cover being placed in contact with the shoulder of the outer cylindrical cover to secure a given lap of the side end wall of the outer cylindrical cover over the end side wall of said housing for installation of said cover assembly on said housing.

6. A gas sensor as set forth in claim 1, wherein the shoulder of the open end portion of the one of the inner and outer cylindrical covers is placed in contact with the open end portion of the other cylindrical cover on a plane extending substantially perpendicular to a longitudinal center line of said cover assembly to secure areas of the outer and inner cylindrical covers installed on the end side wall of said housing.

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7. A gas sensor as set forth in claim 6, wherein the inner cylindrical cover is disposed within the outer cylindrical cover coaxially with each other, the shoulder of the open end portion of the one of the inner and outer cylindrical covers is placed in annular line contact with the open end portion of the other cylindrical cover.

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a sensor element disposed within said housing, said sensor element having a sensing portion projecting from the open end of said housing;

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